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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,251	06/23/2003	Jurgen Otto Besenhard	LEE-0001	1932
23413	7590	07/17/2007		
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			EXAMINER TALBOT, BRIAN K	
			ART UNIT 1762	PAPER NUMBER
			MAIL DATE 07/17/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/602,251	BESENHARD ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Brian K. Talbot	1762	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 May 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 and 20-27 is/are pending in the application.
- 4a) Of the above claim(s) 4,6,10-12,14,15 and 21-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,7-9,13,16 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

1. The amendment filed 5/11/07 has been considered and entered. Claims 17-19 have been canceled. Claims 1-16 and 20-27 remain in the application.
2. This application contains claims 4,6,10-12,14,15 and 21-27 drawn to an invention nonelected with traverse in Paper filed 3/1/06. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.
3. In light of the amendment filed 5/11/07, the 35 USC 112 second paragraph rejection has been withdrawn.

***Claim Rejections - 35 USC § 103***

4. Claims 1-3,5,7-9,13,16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyaki et al. (US 2002/0114993) taken in view of Besenhard et al. (US 5,916,485).

Miyaki et al. discloses a method for producing a lithium ion secondary battery comprising a lithium-based cathode. Miyaki et al. teaches that it is desirable to add a protective layer, such as an electrically conducting protective layer, on the cathode layer (Abstract and paragraphs 0022-0027). Miyaki et al. teaches coating successively or simultaneously with the electrode material mixture (paragraph 0059). Miyaki et al. teaches that the claimed cathode bulk materials in paragraphs 0421 to 0427.

Besenhard et al. discloses a method of substrate induced coagulation that produces electrically conductive composites comprising the steps of: contacting a bulk material with a solution containing a solvent and a flocculant so that the flocculant adheres to the bulk, and then contacting the flocculant-treated bulk material with a dispersion containing a second solvent and a particulate solid particle such that the particulate solid particles deposit on the bulk material. Besenhard et al. teaches that in its method conductivity is achieved using very small amounts of conductive material, which interferes less with the properties of the substrate. Besenhard et al. specifically teaches that its method is useful in forming battery electrodes, and reduces the proportion of electrochemically active components lowering the energy density (col. 7, lines 19-21 and col. 8, lines 4-11). Further it is noted that Besenhard et al. teaches that its method may be used on practically all substrate materials (col. 5, lines 11-20).

It is the Examiner's position that the references taken in combination would have suggested to one having ordinary skill in the art to use Besenhard et al.'s substrate induced coagulation method to adhere an electrically conducting protective layer, or other protective layer, to Miyaki et al.'s particulate cathode material in order to obtain the benefit of using very small amounts of conductive material to prevent lowering the energy density of the battery. Further, one would have expected successful results since Besenhard et al. generally states that its method is successful with many different materials and suggests use in forming battery electrodes. The test of obviousness is not express suggestion of the claimed invention in any or all references but rather what the references taken collectively would suggest to those of ordinary skill in the art presumed to be familiar with them. *In re Rosselet*, 347 F.2d 847, 146 USPQ 183 (CCPA 1965); *In re Hedges*, 783 F.2d 1038.

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As to the heat treatment step, it is noted that Miyaki et al. teaches that the cathode materials with protective layers thereon are subjected to drying after application (see Example 1). Paragraph 0460 states that drying may comprise hot air drying at elevated temperatures.

As to claim 2, the process of Miyaki et al. in view of Besenhard et al. would produce core-shell materials with distinct phases.

As to claim 3, Besenhard et al. teaches the use of aqueous solvents in its substrate induced coagulation process.

As to claim 5, Besenhard et al.'s polymer may be gelatin, a water-soluble protein.

As to claims 7-9, both Miyaki et al. and Besenhard et al. teach the use of "mixed" coatings which contain different particles. Besenhard et al. also teaches the creation of "thick" coatings made by repeating the coating steps (col. 6, lines 61-64).

As to claims 16 and 20, Miyaki et al. teaches the use of titanium dioxide or alumina as the particulate protective layer (paragraphs 0017-0018 and 0026), as well as other of the claimed materials.

### ***Response to Amendment***

5. Applicant's arguments filed 5/11/07 have been fully considered but they are not persuasive.

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Applicant argued that Miyaki et al. fails to teach treating a bulk material with a solvent and flocculant followed by contacting with a dispersion while Besenhard et al. fails to teach this process on a cathode based material for a lithium battery.

The Examiner agrees. Hence, the Examiner applied a combination rejection as either reference failed to solely teach the claimed invention. Applicant is reminded that pointing out the differences between the reference and each individual reference is not sufficient to overcome a rejection based on a combination of the references. One cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references. *In re Keller*, 208 USPQ 871 (CCPA 1981); *In re Merck & Co., Inc.*, 231 USPQ 375 (Fed. Cir. 1986). The test of obviousness is not express suggestion of the claimed invention in any or all references but rather what the references taken collectively would suggest to those of ordinary skill in the art presumed to be familiar with them. *In re Rosselet*, 347 F.2d 847, 146 USPQ 183 (CCPA 1965); *In re Hedges*, 783 F.2d 1038.

Applicant argued that the heating step is not sufficient to produce a concentration gradient of the one or more dopants and that it is only used to remove water.

First off, the claims do not recite any temperature range for which this "gradient" would occur. The Examiner has taken the position that the temperature of 350°C would produce this claimed result. In response to this position, Applicant is invited to supply a showing contrary to the Examiner's position. If so, the Examiner will reconsider his position. Furthermore, even if Applicant were to supply a showing, Applicant is directed to claim 4 of Besenhard et al. that states a sintering step. The Examiner takes the position that the sintering step would also

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produce the claimed gradient concentration (see withdrawn claim 11 and specification, pg. 7, line 12 – pg. 8, line 2 which talks about sintering).

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 8AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*BKTalbot 7/12/07*

Brian K Talbot  
Primary Examiner  
Art Unit 1762

BKT